

REMARKS

Formalities

With this Amendment, Applicant cancels Claims 2, 3, 10, and 11, amends Claims 1, 4, 5, 9, 12, 16, 17, 18, and 19, and adds new Claims 20-34. Therefore, Claims 1, 4-9, and 12-34 are all the claims currently pending in the present Application.

In the current Office Action, the Examiner acknowledges Applicant's claim to foreign priority and the receipt of the certified translation of the priority document.

With this Office Action, the Examiner returns a signed and initialed copy of the PTO-Form 1449 submitted with the IDS of October 2, 2003.

Title and Specification

Title. The title stands objected to as not descriptive.

Specification. The specification stands objected to for failing to clearly identify the invention. The Examiner points out numerous occasions of unclear wording in the specification at pages 5-7 of the Office Action.

Description of the Drawings. The Description of the Drawings is objected to due to informalities.

In view of the above, Applicant amends the Title and Specification as shown in the attached Substitute Specification and redlined copy of the Substitute Specification. Applicant
Applicant submits that the changes being made to the specification have been suggested
by the Examiner, are simply editorial in nature, and no question of new matter or questions of

further search arise. Accordingly, Applicant respectfully requests the Examiner to withdraw the objection.

New Claims

With this Amendment, Applicant adds new Claims 20-34, as shown in order more fully to cover various aspects of Applicants' invention as disclosed in the specification. No new matter is added. These claims are further discussed below.

Claim Rejections—35 U.S.C. §112

Exemplary Illustrations. As a preliminary matter, Applicant notes that included below are Exemplary Illustration A and Exemplary Illustration B. Applicant understands that these illustrations are not part of the description or specification of the present Application and are not going to be entered as such. These illustrations are attached merely to provide a more simple illustration of a complex point.

Regarding the Rejections. The Examiner rejected claims 1-19 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

More specifically, in claim 1, the Examiner has pointed out the following:

- (1) the wording "positioning a sensor in a one edge side in a movement direction of said sensor" is vague in that no orientation information has been recited in the claim;
- (2) "carrying said recording medium in a predetermined direction up to a detection position" is unclear due to absence of orientation;

- (3) the location of “a detection position” in free space is vague since no place of location has been established in the claim;
- (4) the wording “after bringing said sensor in a state” is confusing;
- (5) the wording “in a state” is also confusing;
- (6) the “if” statement is inconclusive, since no condition is recited to follow when the “if” condition does not exist;
- (7) the wording “leading distance” is vague along with “movement distance”, since distance is the extent of space between two objects or places;
- (8) the wordings “upper edge”, “other edge side”, “upper right edge”, and “upper left edge” are vague in the absence of a reference point or location from which up, down, right, and left may be determined;
- (9) the wording “necessary” is considered subjective; and
- (10) “the state” on line 21 is vague.

In the current Amendment, Applicant amends Claims 1, 4, 5, 9, 12, 16, 17, 18, and 19 and believes that the above-described objections have been overcome.

More specifically:

- (1) amended Claim 1 now recites that the sensor is capable of performing a linear movement from one end point to another end point, and vice versa, and that the sensor is first positioned at the “one end point” which is the one of the two end points of the linear movement of the sensor;

- (2) amended Claim 1 now recites that the recording medium is carried in a predetermined direction which intersects the movement direction of the sensor;
- (3) amended Claim 1 now recites that the “detection position” is a position of the recording medium where the sensor detects the recording medium when the sensor is positioned at the above-described “one end point”;
- (4) the wording “after bringing said sensor in a state” has been deleted;
- (5) the wording “in a state” has also been deleted;
- (6) as regards the “if” statement, please note that Claim 4 (or Claim 12, 21, or 27) will follow when the “if” condition does not exist;
- (7) amended Claim 1 now recites a “corner-to-corner distance”, a “movement distance”, and a “virtual carrying distance”, which are all defined as the extent of space between two objects or places;
- (8) the wordings “upper edge”, “upper right edge”, and “upper left edge” have been deleted; instead, a “leading edge”, which is the foremost edge of the recording medium in the predetermined direction (carrying direction), and “corners” of the recording medium, have been recited in amended Claim 1;
- (9) the wording “necessary” has been deleted; and
- (10) “the state” on line 21 has been deleted.

Regarding the Amended/New Claims. Amended Claims 1, 4-9, and 12-19 now include the structure of original Claim 2 (or Claim 10), i.e., the structure of *lowering the detection sensitivity of the sensor and then moving the sensor, whose sensitivity has been lowered, toward*

the other end point, to find the corner-to-corner distance (i.e., the distance, in the carrying direction, between one corner and the other corner on the leading-edge side of the medium).

New Claims 20-34 include the structure of original Claim 3 (or Claim 11), i.e., the structure of *carrying the medium in a direction opposite from the carrying direction by a predetermined opposite-carrying amount and then moving the sensor toward the other end point,* to find the corner-to-corner distance.

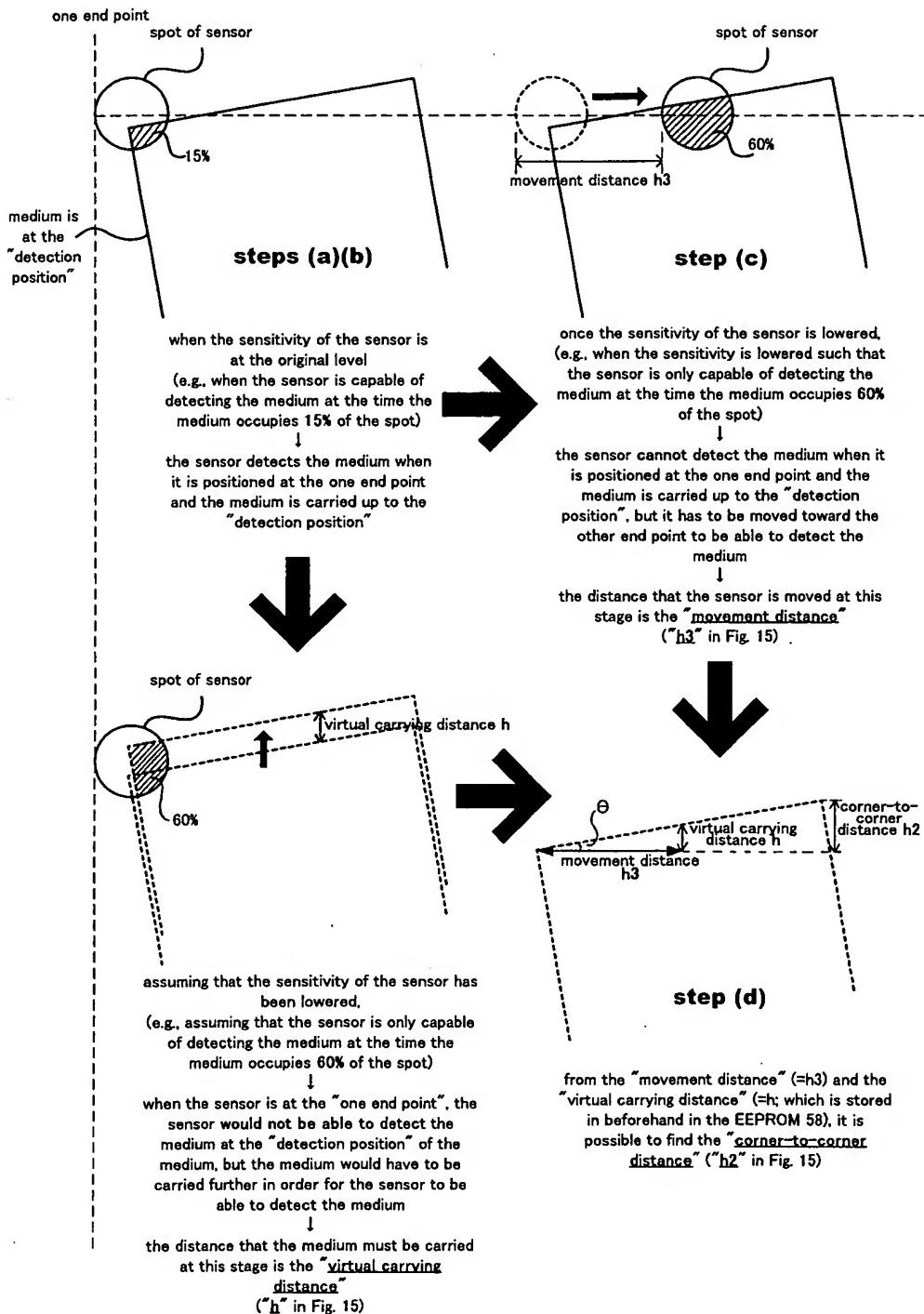
All Claims 1, 4-9, and 12-34 are fully supported by the original specification, and especially, by Figs. 13B, 14A-F, 15, 16A-B, and 17 and the explanations thereof given in the specification. More specifically, the structure of amended Claims 1, 4-9, and 12-19 (the structure of lowering the detection sensitivity of the sensor and then moving the sensor, whose sensitivity has been lowered, toward the other end point) is described on original page 45, lines 5-12 and lines 23-27. Further, the structure of new Claims 20-34 (the structure of carrying the medium in a direction opposite from the carrying direction by a predetermined opposite-carrying amount and then moving the sensor toward the other end point) is described on original page 45, lines 16-27.

The content of amended Claim 1 and new Claim 20 will be described below with reference to Figs. 14A-F and 15, and the figures shown below.

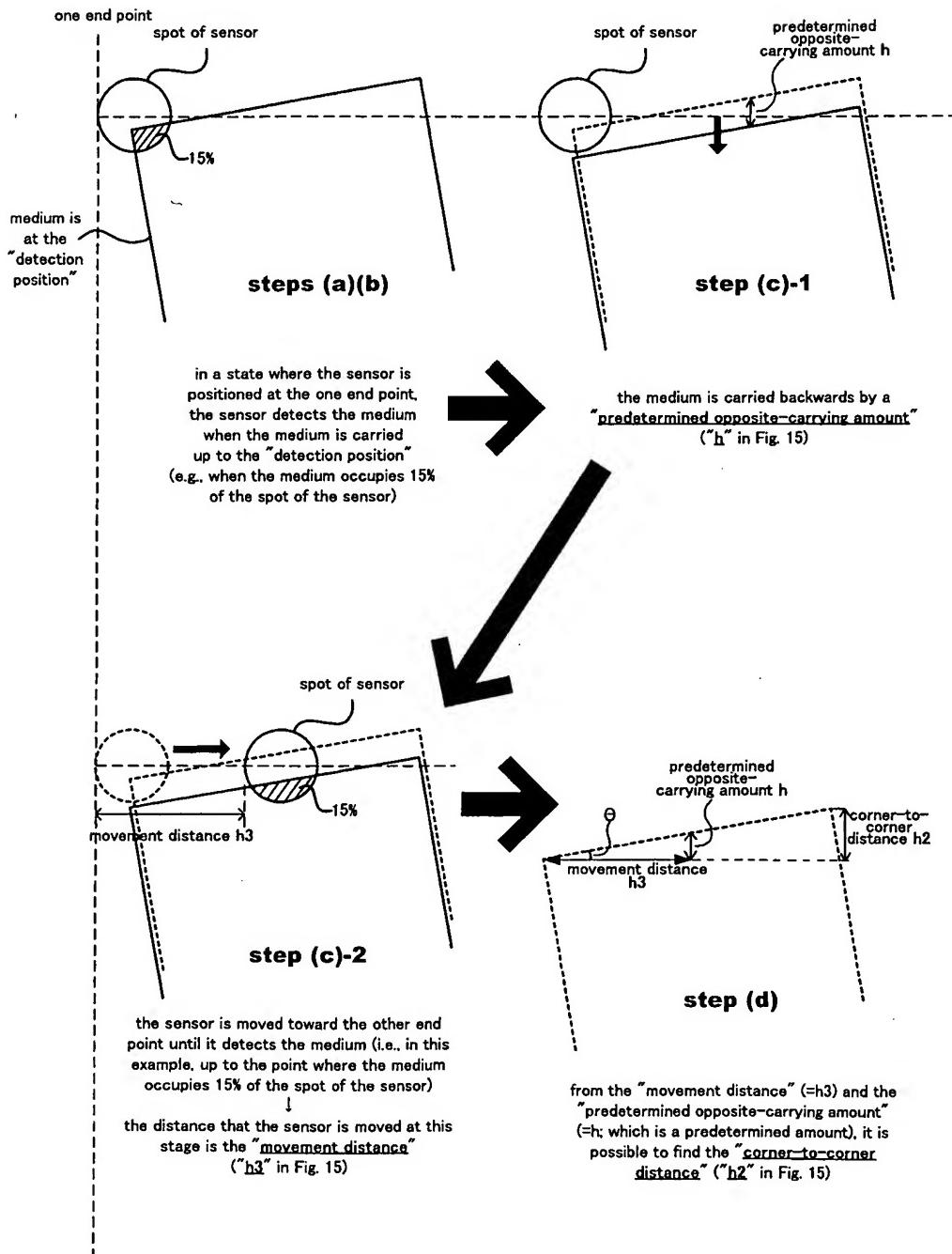
Applicant believes that step (a) of Claims 1 and 20 is self-explanatory from Fig. 14B. Likewise, Applicant believes that step (b) of Claims 1 and 20 is self-explanatory from Fig. 14C.

Steps (c) and (d) of Claim 1 (and the “movement distance” (“h3”), the “virtual carrying distance” (“h”), and the “corner-to-corner distance” (“h2”)) are as described in Exemplary Illustration A below (which is a more detailed version of Fig. 14D):

Exemplary Illustration A



Exemplary Illustration B



Steps (c) and (d) of Claim 20 (and the “movement distance” (“h3”), the “predetermined opposite-carrying amount” (“h”), and the “corner-to-corner distance” (“h2”)) are as described in Exemplary Illustration B above (which is a more detailed version of Fig. 14D).

As described above and in the present specification, with the claimed invention, it is possible to find the corner-to-corner distance (“h2”), as well as the amount by which to carry the medium in order to position the medium at a suitable recording-start position, using the “virtual carrying distance” (“h”) or the “predetermined opposite-carrying amount” (“h”), and the “movement distance” (“h3”) with the help of trigonometric functions (see page 49, line 18 through page 50, line 11 of the present specification).

Claim Rejections—35 U.S.C. §102

Claims 1, 5-9 and 13-19 stand rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Walker, U.S. Patent No. 6,352,332 (“Walker”). Applicant respectfully traverses the rejection in view of the following remarks.

Walker discloses how to accurately find the paper edge 303 by means of continuously sampling measurement values 301 (reflectance values) while scanning an optical sensor 201 across a scan direction. What Walker discloses is: scanning across the whole width of the paper and off its edge to obtain measurement data 301 (see Fig. 3A, step 401 of Fig. 4, and column 6, line 45 through column 7, line 9); forming a “shape curve 302” using the high average reflectance, the low average reflectance, and the field of view of the optical sensor 201 (see Fig. 3A, step 404 of Fig. 4, and column 7, lines 15-25); shifting the “shape curve 302” so that it best fits the data 301 (see Figs. 3A and 3B, step 405 of Fig. 4, and column 7, lines 26-42); and

determining the paper edge 303 based on the best fit, shaped curve, high-to-low point transition (see Fig. 3B, step 406 of Fig. 4, and column 7, lines 43-45).

Walker, however, fails to disclose the structure of lowering the detection sensitivity of the sensor and then moving the sensor, whose sensitivity has been lowered, toward the other end point (as in present claims 1, 4-9, and 12-19), and carrying the medium in a direction opposite from the carrying direction by a predetermined opposite-carrying amount and then moving the sensor toward the other end point (as in present claims 20-34).

Therefore, in view of at least the above, Applicant submits that Walker fails to anticipate any of the claims of the present invention and respectfully requests that the Examiner withdraw this rejection.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No. 10/676,251

Q77505

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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